Training Catalogue

MASIBUS TRAINING WORKSHOPS

Training That Counts

masibus®

Advanced Automation - Sure Solutions

www.masibus.com

MASIBUS TRAINING WORKSHOPS

Training That Counts

Leveraging our three decades of experience and knowledgebase in field of instrumentation, process control, industrial automation and condition monitoring, Masibus, an ISO 9000 – 2001 company, has commenced it's Technology Workshops with the objective of turning ordinary training into great learning experiences. They are structured to enhance your engineering expertise which will be a value addition to your professional growth. The multi dimensional experiences coming from experts in the related fields will increase your awareness, facilitate you to be more effective & achieve improved engineering services from your industrial set up. MTW brings the highest quality of training to professionals in the industry, be it an experienced engineer, practicing technician or a fresh engineer.

Training courses will initially be held at our facility in Gandhinagar and later on in major cities of our country & also at client's facility on request.

Approach to training:

To provide an excellent platform for in-house automation solutions by consulting & interacting with our automation experts.

To re-define the business through specialized training, Masibus has carefully structured all the programs to ensure that attendees gain maximum benefits. A combination of carefully designed training software, hardware, written documentation, together with multimedia presentations, ensures that the workshops combine theory & practicals.

Masibus training workshop is designed for :

- Professionals in engineering industries, this will serve as a refresher course & will improve their job oriented skill sets. Our training will help improve productivity, reduce implementation risk and reduce cost.
- For fresh recruits and budding engineers, this training will make them productive early in their career.

masibus TRAINING WORKSHOPS

(SCADA) - HMI/ SCADA Configuration Course Outline — 3 DAYS

SCADA has traditionally meant to be a window into the process of a plant or togather of data from devices in the field, but now the focus is on integrating this process data into the actual business and using it in real time.

The emphasis of the workshop is on practical industry topics highlighting recent developments using case studies. The latest application of SCADA technologies and the fundamentals of SCADA systems will be covered. The workshop is aimed at those who want to be updated on the latest developments in SCADA systems and want to get a good Understanding of the fundamentals of SCADA design, installation and troubleshooting

Who should attend?

Those who want to become familiar with SCADA project development techniques
SCADA users including engineering staff, maintenance staff and plant supervisors
Technical users who maintain and improve their installed SCADA and control systems
Managers who want more than a basic understanding of SCADA
SCADA System Integrators and Designers

HMI/SCADA Configuration Course Outline

DAY 1 of 3

Day one involves introduction to the various components of SCADA, project design, communications and graphics

- Project Editor
- Graphics Builder
- Program Editor
- Managing Projects
- Include Projects
- The Design Specification
- Setting up Communications
- Graphics
- True Color

DAY 2 of 3

Day two implements various areas of the project design including controls, alarms and the graphic interface design

- Commands & Controls
- Adv. graphictools
- Devices
- Events
- Alarm

DAY 3 of 3

Day three continues with the project design elements of SCADA and introduces methods of reporting and monitoring the system

- Trends
- Process Analyses tool
- Navigation
- Accumulators
- Reports
- Security

(PLC) - Workshop on Demystifying PLC — 2 DAYS

Course objective:

The aim of this intensive two-day course is to go beyond the basic concepts and introduce you to the practical techniques and applications (ICE) of 61131-3. If you ever need to program PLCs or just understand more about their capabilities, then this course is for you. If you are a trainee engineer, graduate engineer, control systems engineer, technician, or senior operator you will gain essential knowledge that will significantly enhance your existing knowledge of PLCs.

PLCs have become the backbone of industrial automation. The International Electro-technical Commission (IEC) has developed a standard set of programming languages for industrial PLCs. The success of these languages can be measured by the large number of major PLC manufacturers who are developing products that are 61131-3 compliant. IEC 61131-3 is becoming the standard of choice in many industries, and will boost productivity and enhance software quality. If you master the subject today your programming knowledge will be applicable across brands well into the future. This knowledge is vital for professional growth.

Course Program:

Introduction to PLC applications, hardware, memory structure of PLC.

- PLC Wiring
- Introduction to PLC programming software
- Ladder diagrams
- Upload / Download / Monitoring
- Advance instructions
- Fault finding / Documentation
- Communication with SCADA software
- Hands on experiment for real time applications

Who should attend?

Those who want to become familiar with SCADA project development techniques
SCADA users including engineering staff, maintenance staff and plant supervisors
Technical users who maintain and improve their installed SCADA and control systems
Managers who want more than a basic understanding of SCADA
SCADA System Integrators and Designers

(IDC) - Practical Data Communication & Industrial Networking — 2 DAYS

Course objective:

This workshop is designed for personnel who need to understand the techniques required to use and apply industrial communications technology as productively and economically as possible.

In modern manufacturing and process industries, the challenge for engineers and technicians is to make more effective use of modern control systems and “Smart” instruments by linking them together with Data Communication systems that are correctly designed and implemented to fully utilize the available technology. This Practical Data Communication and Networking workshop is designed to benefit instrumentation engineers and technicians who have little previous experience in Data Communications and are involved in specifying, commissioning and debugging Data Communications and Networking systems for instrumentation and control in the industrial environment. This workshop has been structured to cover the main concepts of Data Communications, to clarify their meaning and to describe their applications in a modern process and control system.

Course Program:

- The fundamentals of data communications
- How to troubleshoot RS-232 & RS-485 links
- How to install communications cables
- The essentials of industrial Ethernet & Local Area Networks
- How to troubleshoot protocols such as Modbus
- The fundamentals of FieldBus & DeviceNet standards

Who should attend?

Anyone with a need to understand the techniques required to use and apply industrial communications technology as productively and economically as possible, like

- Instrumentation & Control Engineers
- Process Control Engineers / Electrical Engineers
- Control System Engineers / Consulting Engineers
- Maintenance Supervisors
- Control Systems Applications Engineers

SCADA
PLC
IDC
CAL
ICS
BCS
WIA
VIB
ITH
TPM

(CAL) - Workshop on Calibration — 2 DAYS

Course objective:

This workshop is designed to basics you to the Calibration introduce, its requirement and benefits, some calibration terms, measurement uncertainty and Temperature & Pressure Calibration. The aim of this workshop is to provide you with the skills and fundamentals required for any calibration process.

The course covers specification of laboratory reference equipments, testing & calibration techniques including documentation, traceability, and uncertainty evaluation as required by ISO/IEC guidelines.

Course Program:

- Understand Calibration, Its basic requirements and benefits
- Be able to select the Reference Calibration Standard
- Understand Calibration Terms and its importance
- Be able to estimate the Measurement Uncertainty
- Be able to establish the system to comply the ISO 9001:2008–Calibration Requirements
- Be able to decide the Calibration Interval and balance between cost of calibration and loss because of Calibration problem
- Understand Temperature Calibration and it's techniques
- Understand Pressure Calibration and its techniques.

Who should attend?

- Calibration Engineer / Technician
- Instrumentation Engineer / Technician
- Maintenance Engineer / Technician
- QA / QC Engineer / Technician
- Process control Engineer / Technician

(ICS) - Tuning of Industrial Control System — 2 DAYS

Course objective:

This workshop is designed to introduce you to the techniques of tuning industrial control systems, the aim of this workshop is to provide you with the skills and fundamentals required to tune controllers for optimum performance, real process dynamics are simulated and controlled to reinforce the concepts discussed.

Course Program:

- Know how to characterize the dynamic response of an industrial process
- Be able to measure the dynamic parameters of a process
- Be able to select performance criteria and tune feedback controllers
- Be able to pick the right controller modes and tuning parameters that match the objectives of the control system
- Understand the effect of sampling frequency on the performance of computer-based controllers
- Know when to apply and how to tune cascade, feed-forward, ratio, and multivariable control systems
- Be able to apply adaptive and auto-tuning control strategies to compensate for process nonlinearities

Who should attend?

- Instrumentation and control engineers
- Process control engineers
- Operators controlling processes
- Automation engineers
- Systems integrators

(WIA) - Wireless for Industrial Automation — 2 DAYS

Course Objective:

Designed for personnel with a need to understand the techniques required for using and applying wireless communications technology as productively and economically as possible, this workshop will also provide you with a clear understanding of the choices available in designing and implementing your own wireless network.

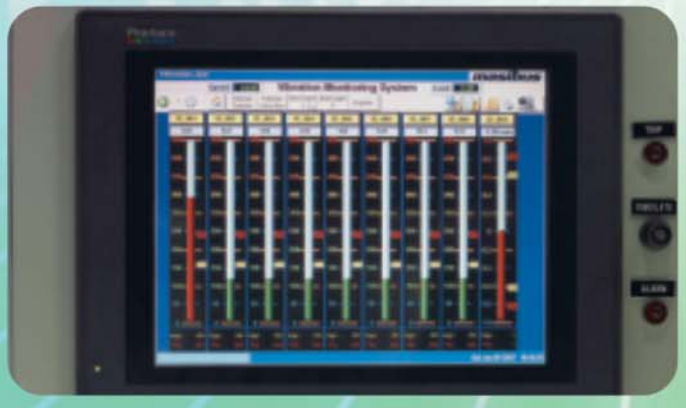
The use of wireless communications is being rapidly implemented in the industrial environment with great success provided certain ground rules are applied, such as ensuring a robust wireless link, correct integration with the wired communications systems and proper data security. The most important objective of wireless communications networks must be to achieve similar capacities, bandwidths, responsiveness and availability to that of wire based communications. This workshop commences with an overview of wireless communications and how radio works. A detailed examination is then made of Wireless Personal Area Networks or WPANs (Bluetooth/ IEEE 802.15) which are similar to their wired counterparts but based on radio. Wireless Local Area Networks or WLANs (IEEE 802.11) are then reviewed with a practical comparison to the standard wired LANs. Wireless Wide Area Networks are then examined with an emphasis on how they are expanding to provide broadband services.

Course Program:

- Implementation limits, practical limits associated with wireless technology and integration of sensor, computer and actuator current
- Future technologies of industrial applications.

Who should attend?

- Application Engineer/ Manager
- Embedded design engineer / Manager
- Instrumentation Engineer / Manager



(VIB) - Practical Approach to Vibration Monitoring & Protection — 2 DAYS

Course Objective:

The aim of vibration monitoring is to detect of changes in the vibration condition of the object under investigation during its operation. The vibration measurements can be conducted without any change in the operation mode of the object. Practical training workshop on vibration monitoring is aimed to simplify the vibration measurement technology for practical use.

Course Program:

- Value of Condition Monitoring
- Fundamentals of Vibration
- Instrument & Sensor
- Vibration Measurement
- Vibration Analysis
- Workshop practice

Who should attend?

Professionals working in industry who desire to know the fundamentals of Vibration measurement in rotating machines and the best practices in the use of vibration as condition monitoring techniques for design / maintenance / trouble-shooting in Control & Instrumentation systems would find this course a tremendous value addition to their skills.

- Instrument Engineers
- Maintenance Engineers
- Sr. Engineer & Asst. Engineer
- Trainees & Technicians

(TPM) - Industrial Temperature/ Pressure Measurement Workshop — 2 DAYS

Course Objective:

Practical training workshop on Industrial temperature and pressure measurement technology in industry.

Who should attend?

Professionals working in any industry having desire to know about best practices in the use of temperature and pressure measurement techniques to design / maintain / trouble-shoot in Control & Instrumentation systems would find this course a tremendous value addition to their skills. Basic knowledge of instrumentation engineering is required.

Course Program:

DAY 1

Introduction
- What is Instrumentation and Controls (I&C)?
- Selection Of Measurement And Control Devices
- Electrical/Electronic Considerations, Communication
- Safety, Equipment Location, Performance
- Air Supply, Electrical Supply, Grounding
- Installation And Maintenance
- Process Data Sheets
- Engineering contractor scope of work
- Package equipment scope of work

Pressure Measurement
- Overview, Comparison Table for application and selection
- Units of Measurement
- Gauges, Transmitters (DCSs)
- Accessories: Seals, Snubbers, Calibrators and Manifolds
- Installation
- Instrument Specification Sheets

DAY 2

Temperature Measurement
- Overview, Comparison Table for application and selection
- Thermo wells
- Thermocouple
- Resistance Temperature Detector (RTD)
- Infrared Pyrometers
- Instrument Specification Sheets

Alarm And Trip Systems
- Overview
- Fail-Safe and De-energize-to-Trip
- Elements (Inputs, Logic, Output)
- Design, Documentation
- Testing (Input, Logic, Output)
- Management of Change

Enclosures
- Overview, General Requirements
- Documentation, Fabrication, Protection and Rating
- Electrical, Pneumatics
- Temperature and Humidity Control
- Inspection and Testing, Certification, Shipping

Besides the Course.....

- You will participate in practical sessions.
- Learn about diagnostic features and how to use them.
- Learn practical tips & tricks on trouble shooting.

(ITH) - Workshop on Industrial Thermography 2 DAYS

Course Objective:

Predictive maintenance helps ensure the equipment efficiency by detection of early faults. Thermography is the most effective condition monitoring technique used to isolate conditions that indicate impending failure. Our training workshop on Industrial Thermography is aimed at developing imaging and analytical skills in troubleshooting day to day faults.

Course Program:

- Industrial Maintenance Fact
- Fundamentals of Thermodynamics related to maintenance
- Concept of Electromagnetic spectrum range
- Impact of Heat transfer theory in maintenance
- Temperature measurement technique with demo exercises
- Application of Thermography in Industries & case study
- Infra-red software handling & work shop practice
- Thermography reporting & presentation

Who should attend?

- Facility management personnel of Datacenter / IT firm
- Electrical / Mechanical Maintenance personnel in any industry
- Condition Monitoring Personnel
- Building Surveyors / Service providers

(BCS) - Workshop on Boiler Control Engineering 2 DAYS

Course Objective:

This workshop is designed to enable the Instrumentation Engineer, Boiler Operation Engineer and Boiler Manufacturer to understand, configure and simulate the critical parameters of the boiler, build the control strategy and Fine tune the parameters to optimize Boiler Efficiency.

Course objectives:

- Be able to appreciate the Air & Flue Gas Cycle, Water & Steam Cycle for Boiler
- Be able to Configure Algorithms for Critical Measurements like Drum Level Measurement, Steam Flow Measurement, Feed Flow Measurement and Air Flow Measurement
- Be able to build auto control strategy for Single Element, Two Element & Three Element Drum Level control and simulate the performance on simulator
- Be able to appreciate the control strategy for combustion control, Furnace draft control and Steam temperature control
- Understand the Safety and Fail Safe features incorporated in boilers
- Able to select suitable flame scanners for Boiler Flame monitoring
- Able to select the suitable Gas and Liquid Analyzers for performance monitoring of the boiler
- Able to appreciate the Boiler Efficiency Calculation and simulate the effect of Key parameters on simulator
- Explore the coordinated control strategy for Boiler, Turbine and Generator Load.

Who should attend?

- Instrumentation Engineers and technicians
- Boiler Operation Engineers
- Boiler Manufacturers
- Boiler Plant Commissioning Engineers

For details mail to training@masibus.com or call at 98985 86951

masibus®
Advanced Automation - Sure Solutions

MASIBUS AUTOMATION AND INSTRUMENTATION PVT. LTD.
B-30, G.I. D.C. Electronics Estate, Sector-25, Gandhinagar - 382 044, Gujarat, INDIA.
Tel. : +91 79 23287275 - 79 Fax : +91 79 23287281 - 82
e-mail : sales@masibus.com • www.masibus.com

kreativeidea • 98259 26602 (DOC.ref.MTW Cat-0/R0/0309)